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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,935	06/16/2000	Rudolf Maarten Bolle	YOR9-2000-0382US1	2281

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EXAMINER
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BAYAT, ALI

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 11/14/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/595,935

Applicant(s)

BOLLE ET AL.

Examiner

Ali Bayat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 8/13/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-24 is/are rejected.
- 7) ☒ Claim(s) 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Arguments*

1. In response to applicant's amendment received on 8/13/03, all requested changes to the specification and claims have been entered. Claim 4 has been cancelled.

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piosenka et al. (U.S. 4,993,068) in view of Blonder (U.S. 4,414,684).

In regard to claim 1 Piosenka provides for a computer system comprising one or more central processing units and one or more memories, the system further comprising: one or more sensors that sense one or more characteristics of a user (Fig.1 elements 12-15, col.5 lines 20-27) and converts the characteristics into a first digital representation that is stored in one or more of the memories (Fig.1 element 25), the first digital representation having one or more subcharacteristics (col. 3 lines 45-48, note retinal pattern, fingerprints, or voice pattern), the subcharacteristics being invariant over time, insensitive to common sensing artifacts, and capable of being repeatably extracted (col. 3 lines 45-48, note fingerprints ); Piosenka does not specifically provide

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for a distortion process that selectably distorts the first digital representation into a distorted digital representation by distorting at least one of the subcharacteristics, the distortion process being repeatable and non-invertible ; and a comparison process that compares one or more sets of the distorted subcharacteristics to one or more stored sets of distorted subcharacteristics to determine the identity of the user. However in the same field of endeavor Blonder provides for the above limitations ( col.2 lines 18-29). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Blonder with system and method of Piosenka. Because counterfeiting or falsification is reliably precluded col.2 lines 23-24.

With regard to claim 2 Piosenka provides for a system, where the characteristics include any one or more of the following: a fingerprint (Fig.1 element 13), a face (Fig.1 element 11), a hand, an iris of an eye, a pattern of subdermal blood vessels, a spoken phrase (Fig.1 element 14), and a signature (Fig.1 element 15).

As to claim 3 Piosenka provides for a system, where the subcharacteristics include any one or more of the following: a complete biometric (Fig.1 elements 10-15), a partial biometric (any element of 11-15 elements in Fig.1), a feature (col.6 lines 7-10 note blood type, medical history allergies to medication), a feature position, a feature property, a relation between two or more features, a subregion of an image.

With regard to claim 5 Piosenka provides for a system, where the distortion is applied to a orthogonal Cartesian grid partitioning of the first digital representation ( Fig.3B element 124 col.11 lines 25-26, note block 124 collects the biometric data from the requestor and digitizes this data).

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As to claim 6, Piosenka provides for a system, where the distortion is applied to a circular polar-coordinate grid partitioning of the first digital representation ( col.11 lines 25-28, note retinal scans).

With regard to claim 7 , Piosenka provides for a system, where the distortion process is a geometric distortion of the first digital representation ( col.11 lines 25-28, note photographs).

As to claim 8 , Piosenka provides for a system, where the distortion process is a block scrambling of the first digital representation ( Fig. 3A element 108, note encrypted).

With regard to claim 11 , Piosenka provides for a system, where the distortion process is applied within a canonical reference frame associated with the first digital representation ( clo.3 lines 45-48, note facial photograph).

In regard to claim 15, Piosenka provides a system, where the comparison process provides either a unique recognition ID for the user corresponding to one of the people enrolled in the database or a non-recognition indication (Fig.3B col.11 lines 10-35).

With regard to claim 16. See claim 15 above. It recites similar limitation as claim 15. Hence it is similarly analyzed and rejected.

As to claim 17 Piosenka provides for a system, where the second digital representation is discarded and replaced by a new second digital representation distorted by a new distorted process (Fig.1 element 11 col4 lines 63-64. note that user 2 may have his picture taken by camera 11 only).

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In regard to claim 18. See claim 17 above. It recites similar limitation as claim 17. Hence it is similarly analyzed and rejected.

With regard to claim 19 Piosenka provides for a system, where the sets of the distorted subcharacteristics correspond to one or more of following: one or more minutiae in a fingerprint, a location of eyes, nose, and mouth in a face, a phase and contrast of optical texture in an iris, a set of formant frequencies and their time derivatives in a speech signal (Fig.1 element 14 col.3 line 47. note voice pattern), and one or more joint lengths and widths in a hand.

As to claims 20 and 21 Piosenka provides for a system, where the distortion process is a geometric distortion of the first digital representation, and block scrambling of the first digital representation. (Fig.1 elements 11-15 col.3 lines 31-32, note encryption that corresponds to geometric distortion, by encrypting the blocks of digital image).

In regard to claims 22-24 see claim 1 above. They recite similar limitations as claim 1 above. Hence they are similarly analyzed and rejected.

3. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pioseka (U.S. 4,993,068) in view of Blonder (U.S. 4,414,684), and further in view of Jain et al. (U.S. 6,185,318).

In regard to claims 9 and 10 Piosenka provides for digital representation (col.5 lines 20-27), but does not particularly teach quantization, and where the distorted digital representation has a larger range relative to the range of the first digital representation. However in the same field of endeavor Jain provides for above limitations (Fig.13

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element 1320 col.14 line 17, col.14 lines 53-58 respectively). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Jain with the system and method of Piosenka, because quantization is the process of converting discrete image samples to digital quantities following the sampling process.

*Allowable Subject Matter*

3. Claims 12-14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Cited References*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent 6,539,101 to Black is cited for method for identity verification.

U.S. patent 5,787,394 to Bahl et al. is cited for state-dependent speaker clustering for speaker adaptation.

U.S. patent 6,233,348 to Fujii et al. is cited for fingerprint registering apparatus, fingerprint identifying apparatus, and fingerprint identifying method.

U.S. patent 5,909,501 Thebaud is cited for systems and methods with identity verification by comparison and interpretation of skin patterns such as fingerprints.

U.S. patent 5,963,657 to Bowker et al. is cited for economical skin-pattern acquisition and analysis apparatus for access control; systems controlled thereby.

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U.S. patent 5,703,958 to Hara is cited for picture processing method for correcting distorted pictures and apparatus for executing this method.

U.S. patent 5,291,560 to Daugman is cited for biometric personal identification system based on iris analysis.


U.S. patent to Driscoll, Jr. et al. is cited for method and apparatus for verifying identity using image correlation.


#### Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 703-306-5915. The examiner can normally be reached on M-Thur 9:00-7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-3085246. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5631.

Ali Bayat   
Patent examiner  
Group Art Unit 2625  
11/5/03

  
**BHAVESH M. MEHTA**  
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